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# Report of the 1993 **INTERNATIONAL BOARD OF REVIEW**

A review  
of the operation of the  
Alberta Heritage Foundation  
for Medical Research  
for the period 1987 - 1993



ALBERTA HERITAGE  
FOUNDATION FOR  
MEDICAL RESEARCH

AUGUST 1993

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ALBERTA HERITAGE  
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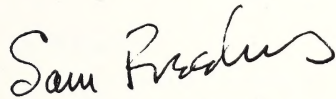
Mr. Alvin G. Libin  
Chair, Board of Trustees  
Alberta Heritage Foundation for Medical Research  
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EDMONTON, Alberta  
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June 16, 1993

Dear Mr. Libin:

It gives me great pleasure to enclose the Report of the 1993 International Board of Review on the operation of the Alberta Heritage Foundation for Medical Research for the period 1987-1993. The IBR is particularly grateful to the Board of Trustees for the interest shown in the process and for the excellent meeting with the Trustees held in Edmonton. If I can provide any additional information, please do not hesitate to contact me.

Sincerely yours,

A handwritten signature in dark ink, reading "Sam Freedman". The signature is written in a cursive, flowing style.

S.O. Freedman, M.D.  
Chair, IBR  
Professor of Medicine, McGill University  
Director of Research, Jewish General Hospital  
Montreal, Quebec



## TERMS OF REFERENCE

### International Board of Review

The Alberta Heritage Foundation for Medical Research (AHFMR) was established in 1980 by the AHFMR Act of the Government of the Province of Alberta. Under the provisions of the AHFMR Act, an International Board of Review (IBR) is required to appraise the operation of the Foundation at intervals of six years and report its recommendations to the Trustees of the Foundation. The first IBR submitted its report in October 1987. The present IBR was established by the Trustees in the winter of 1992 to report on the second six years of the AHFMR. Its mandate was to:

**1** Review the Foundation's programs of grants and awards according to the objects (mission) of the Foundation *to establish and support a balanced long-term program of Medical Research in Alberta directed to the discovery of new knowledge, and the application of that knowledge to improve health and the quality of health services in Alberta.*

In so doing, the Board shall pay particular reference to the objectives of the Foundation, which are to:

- ◆ stimulate research in medical sciences,
- ◆ implement effective means of using in Alberta, the scientific resources available in medical sciences,
- ◆ support medical research laboratories and related facilities in Alberta,
- ◆ promote cooperation in research in medical sciences in order to minimize duplication in, and promote concentration of, effort in that research, and
- ◆ encourage young Albertans to pursue careers in research in medical sciences.

**2** The Board should also consider during its review, and provide advice on:

- ◆ the various strategies that might be used to maintain vigour, innovation, and excellence in biomedical research in a steady state and with finite resources;
- ◆ a perspective on the relative roles of the Foundation, the universities, hospitals, government, and industry in the promotion and maintenance of biomedical research;
- ◆ the increasing interest in health research in the Province of Alberta and the challenges that this offers to the Foundation.

**3** Provide a report to the Trustees of the Foundation,

- ◆ commenting on the *impact and effectiveness* of the present program of grants and awards in achieving the main objectives of the Foundation,
- ◆ recommending, if required, *modification* of the present program of grants and awards, and
- ◆ recommending consideration of *new programs* of grants and awards to achieve the main objectives of the Foundation in the most efficient way.

In accordance with this requirement, an International Board of Review was established in the fall of 1992, with the following members:

**Dr. Samuel O. Freedman**, Chair (formerly Vice-Principal, Academic, and formerly Dean of the Faculty of Medicine, McGill University)  
Currently Professor of Medicine, McGill University, and Director of Research,  
The Sir Mortimer B. Davis - Jewish General Hospital, Montreal, Quebec, and Vice-President,  
Fonds de la recherche en santé du Québec.

**Dr. John R. Challis**  
Director, The Lawson Research Institute, The University of Western Ontario, London, Ontario.

**Dr. John R. Evans** (formerly President of the University of Toronto, and formerly Dean of the Faculty of Medicine, McMaster University)  
Currently Chairman of the Board, Allelix Biopharmaceuticals Inc., Mississauga, Ontario, and Director and Chairman, The Rockefeller Foundation, New York, New York.

**Dr. Joseph B. Martin**  
Dean, School of Medicine, University of California, San Francisco, California.

**Prof. Michael Peckham**  
Director of Research Development, Department of Health, London, U.K.

**Dr. William Sly**  
Professor and Chairman, Edward A. Doisy Department of Biochemistry and Molecular Biology, St. Louis School of Medicine, St. Louis, Missouri.

**Dr. Patrick Vinay** (formerly President, Fonds de la recherche en santé du Québec)  
Currently Professeur titulaire de médecine à l'Université de Montréal, et directeur de la recherche clinique au Centre de recherche de l'Hôpital Notre-Dame, Montréal, Québec.

The second International Board of Review met for five days in March 1993, spending two and one-half days in Edmonton and two and one-half days in Calgary. The detailed observations and recommendations of the second IBR for the programs and procedures of the Foundation follow.



# An Alberta Success Story

The IBR applauds AHFMR's role in the creation of a milieu for the advancement of research excellence in the biomedical sciences. The achievements of investigators supported by AHFMR and the enlightened policies of the Trustees have led to the recognition of the Province of Alberta as one of the major medical research centres in North America. The quality of the research has enabled the Province to greatly increase its share of medical research funding from Federal agencies.

The IBR was impressed with what has been achieved to date, including the Foundation's ability to respond to emerging needs in health-related research. We are confident that Alberta researchers and all potential users of their discoveries will be well served by AHFMR in the years to come.

## AHFMR Achievements

From the outset, AHFMR has espoused the principle that the training, recruitment, establishment, and maintenance of highly skilled researchers is the cornerstone of medical research in the Province. The IBR applauds the contributions of AHFMR to the dramatic increase in biomedical research in Alberta since 1980. The stringency of the peer review process to select the very finest researchers for support as Clinical Investigators or Scholars, and to select investigators of outstanding pre-eminence for longer term support as Heritage Scientists has been fundamental to this success story. Generous establishment grants have allowed new appointees to set up their laboratories quickly and effectively.

The achievements of researchers supported by the Alberta Heritage Foundation for Medical Research show that the Foundation has invested its resources wisely, with returns in knowledge and improved patient care to the people of Alberta and elsewhere.

AHFMR scientists have earned international acclaim for advances such as:

- ◆ Successfully transplanting insulin-producing cells into diabetics for long-term freedom from insulin therapy.
- ◆ Developing a promising, experimental vaccine for diabetes.
- ◆ Devising electrical stimulation therapy that stroke or spinal-cord injured patients can use at home.
- ◆ Finding a drug for hepatitis B.
- ◆ Diagnosing lupus more accurately and earlier, through antibody screening.
- ◆ Transplanting knee ligaments – first in Western Canada.
- ◆ Improving implantable devices to control heart rhythms in people at risk for heart attacks.
- ◆ Advancing knowledge of oncogenes to understand how cancer is initiated.
- ◆ Identifying genes associated with susceptibility to arthritis, diabetes, and other diseases.
- ◆ Discovering some of the ways injured nerve cells regenerate.
- ◆ Identifying one way that killer cells in the immune system destroy tumour cells, bacteria, and viruses.
- ◆ Identifying some of the mechanisms of antibiotic resistance.
- ◆ Identifying a factor that causes some types of high blood pressure.
- ◆ Developing a simple test for diagnosing stomach ulcers caused by arthritis drugs.
- ◆ Participating in international patient trials of new drugs for heart disease, Alzheimer's disease, AIDS, arthritis, and other conditions.

- ◆ Providing specialized care in patient clinics for: Alzheimer's disease, lupus and other forms of arthritis, joint injuries, diabetes, thyroid disorders, cancer, rehabilitation for the paralyzed, infectious diseases, heart disease, multiple sclerosis, hearing disorders, neonatal medicine, asthma and other lung diseases.
- ◆ Commercializing new devices and drugs through new companies or licensing agreements with existing companies.

International recognition has come to several investigators and groups at the Universities of Alberta and Calgary. At the University of Alberta, AHFMR support helped build the MRC Group in Protein Structure and Function, the NCI Group in Molecular Mechanisms of Cell Growth, and renowned inter-disciplinary groups in diabetes, islet cell transplantation, rehabilitation neurosciences, lipid and lipoprotein metabolism, and cardiovascular disease, amongst others. The University of Calgary's innovative multi-disciplinary research approach has created extraordinary opportunities for collaborative groupings and for interaction between basic scientists and clinicians. An MRC Group in Signal Transduction, and MRC Programs in Cardiovascular Electrophysiology and in Smooth Muscle Research are other examples of cutting edge research at the University of Calgary that has been triggered through AHFMR support.

The University of Alberta moved from eleventh position in 1977-78 in the national rankings for total research support in Faculties of Medicine to fourth place by 1986-87, a position it has maintained to the present time. The University of Calgary moved from fifteenth to eighth position over the same time period. Total funding for biomedical research at the University of Calgary has risen from \$2.5 million in 1979 to \$36 million in 1991. At the University of Alberta, support has doubled from \$20 million in 1983-84 to \$43 million in 1990-91.

It is notable that much of the growth in operating grant support has been derived from national funding agencies. For example, at the University of Calgary, awards from the Medical Research Council of Canada have risen from \$3 million in 1982 to \$12 million in 1991. The average operating grant for AHFMR-supported personnel between 1987-88 and 1991-92 has exceeded that of other faculty members. In 1991, the average operating support for an AHFMR faculty member at the two universities was \$153,266. Their publication record is, on average, superior (4.3 papers/ investigator/year, with 64% in top journals). Thus, the stringent peer review system has led to a demonstrable, value-added selection process which has preferentially increased funding from national agencies, and simultaneously created additional jobs for Albertans.

The IBR praises the Foundation for its role in these developments, and congratulates wholeheartedly the scientists involved for their individual and collaborative achievements. The IBR strongly endorses a policy that ensures continued support from AHFMR for all programs of excellence, both for established investigators through career sustainment and for new appointees, using the peer review criteria that have been instrumental in achieving current successes.

The Foundation has accomplished much in its relatively short life, and there is no doubt that its achievements to date could not have been realized without the wise and capable leadership of the late Dr. Lionel McLeod and Dr. Matthew W. Spence and their staffs. President since 1990, Dr. Spence's vast experience in research and research administration, his energy, and his vision for the future of the Foundation have opened new doors for the continuation and enhancement of the "Alberta success story".



# Summary of IBR Recommendations

## Recommendation 1

The IBR endorses the fiscal plan of the Trustees to maintain the endowment of the Foundation at today's market value or higher, in order to preserve its original purchasing power.

## Recommendation 2

The IBR recognizes the need to support both recruitment and core excellence through the programs of AHFMR. We recommend a policy that will provide career security for outstanding AHFMR-funded scientists; and that will create opportunities for recruitment in existing areas of strength and a limited number of new initiatives. In order to implement this policy **while maintaining a steady-state budget**, the IBR recommends a programmed reduction in the number of AHFMR-funded faculty positions over the next five years.

## Recommendation 3

The IBR recommends that AHFMR support a limited number of additional post-doctoral fellowships as an innovative fast-track response program administered by the universities. Faculty members would be eligible to apply for support of a post-doctoral Fellow through block grants to their university from the Foundation.

## Recommendation 4

The IBR supports the present policy of the Trustees to reduce the level of expenditure on some of the infrastructure programs associated with personnel and training awards.

## Recommendation 5

The IBR recommends that the Foundation develop a proactive approach to research opportunities in the biomedical and health sciences.

## Recommendation 6

The IBR recommends that encouragement be given to collaborative projects between universities. There are instances where the critical mass essential for a major advance may be found by the establishment of affinity groups across faculties and campuses.

## Recommendation 7

The IBR recommends that the Foundation develop an expanded set of consultative and collaborative activities with the universities, the Government of Alberta and its other health-related agencies, and with foundations, research institutes, and universities outside the Province.

## Recommendation 8

The IBR recommends the establishment of new mechanisms to explore appropriate and effective ways to exploit new initiatives that will have a direct impact on the health and well-being of the citizens of Alberta.



### **Recommendation 9**

*The IBR recommends the appointment of a Senior Administrative Officer to manage many of the day-to-day activities of the Foundation, freeing the President to undertake an exploration of new initiatives.*

### **Recommendation 10**

*The Foundation is facing a dilemma of conflicting priorities shared by many funding agencies formerly operating solely in the biomedical area. The IBR recommends that health research be supported in relation to the characterization and prioritization of health problems in the Province of Alberta. The role of AHFMR should be to focus on the provision of the skills necessary to conduct health research with emphasis on methodology development.*

### **Recommendation 11**

*The IBR supports the current composition of the scientific committees of AHFMR and the use of expert ad hoc members when appropriate. To enhance communication with the scientific community in Alberta, and to provide stronger input from the Program Advisory Committee (PAC) to the Scientific Advisory Council (SAC), it is recommended that the PAC be required to meet at least quarterly; that it evolve into the principal local advisory committee between the President of AHFMR and the Alberta universities, and that the minutes of its meetings be provided to SAC and the Board of Trustees. The Chair of PAC, or delegate, should be invited to participate as an ad hoc member in the meetings of SAC for discussion of specific issues.*

### **Recommendation 12**

*The IBR recommends that AHFMR continue its technology commercialization program, consider minor modifications in process suggested by its constituency, and consider expansion of the resources available for its support.*

# An Overview of AHFMR

## The Environment

The Province of Alberta has a population of 2.5 million. Approximately 700,000 people live in the capital city of Edmonton, and the same number reside in Calgary. There are large, modern health science centres, including a medical school, in each city. The two medical schools, the University of Alberta and the University of Calgary, have different needs and different perspectives; and these are sometimes accentuated by the ongoing rivalry between the two cities.

Until the mid-1940s, the economy of Alberta was modest and largely dependent upon agriculture, forestry, mining, and tourists. With the discovery and development of extensive oil deposits, and the seemingly insatiable hunger for petroleum products throughout the world, the economy of the Province boomed from 1948 to 1980. Windfall profits from oil revenues, derived from ownership of the mineral rights and taxation, caused provincial revenues to markedly exceed the costs of operating the Government.

## The Heritage Savings Trust Fund

Surplus revenue was placed into a *Heritage Savings Trust Fund*, which was invested in both conventional financial vehicles and in fixed assets such as real estate, dams, and railway cars.

## The Establishment of AHFMR

Prompted by vigorous representations from the medical schools and their affiliated teaching hospitals, the Province also turned its attention to the development of a major thrust in biomedical research. Provincial representatives visited some of the major medical research centres in North America and Europe, and impressed by what they saw, returned to Alberta with the idea of establishing the Province as a world-class centre for medical research through the establishment of AHFMR. They expected that the research supported by the Foundation would have a direct spin-off in terms of improved patient care and medical education, and also that, through technology commercialization, there would be the development of a health-related industrial sector in the Province.

In 1979, the Government established AHFMR with an Act of Legislature, and in 1980 created the AHFMR endowment.

The Foundation is supported by this \$300 million endowment from the Alberta Heritage Savings Trust Fund. The endowment is a separate fund, the first of its kind to be established by the Alberta legislature. The Act establishing the Foundation stipulates that as long as the fund remains with a book value of \$300 million, any amounts in excess may be expended by the Foundation. The market value of the endowment was \$576 million on March 31, 1992; in terms of 1980 dollars, it was \$294 million.



## Governance of the Foundation

The Foundation is governed by a nine-member Board of Trustees, appointed by the Lieutenant Governor-in-Council of the Province of Alberta. Four of the Trustees are public members; one is a nominee of the Trustees, and the remaining four are nominees of various Alberta constituencies – the Board of Governors of the University of Alberta and the University of Calgary, the College of Physicians and Surgeons of the Province of Alberta, and the MSI Foundation. The Trustees are appointed for terms of not more than five years, renewable once. Recent terms have been varied in an attempt to ensure a relatively even turnover of board members.

The first Chair of the Board of the Foundation was Mr. Eric Geddes of Edmonton, who served until 1990. He was succeeded by Mr. Alvin G. Libin of Calgary, the current Chair.

The first executive head of the Foundation was Dr. Jack Bradley, who had assisted the Premier of the Province in developing the concept of the Foundation. Dr. Bradley was succeeded by Dr. Lionel McLeod, a former faculty member of the University of Alberta and a former Dean of the Medical School in Calgary. Dr. McLeod was the first President and served from 1981 to 1989. He was succeeded in 1990 by Dr. Matthew W. Spence, a graduate of the University of Alberta, and most recently Professor of Pediatrics and Biochemistry, and Director of the Atlantic Research Centre at Dalhousie University in Halifax. He is a former Vice-President of the Medical Research Council of Canada.

The offices of the Foundation are located in Edmonton. The current staff of 19 people work in five sections: administration, scientific (grants and awards), finance, communications, and technology commercialization. The Foundation is advised by several committees. The most senior committee is the Scientific Advisory Council (SAC), chaired by the President of the Foundation with a minimum of 11 members drawn from the international scientific community. The SAC provides advice to the President and the Trustees on policy matters related to the scientific affairs of the Foundation, and also functions as the Review Panel for the Heritage Medical Scientist Award. The SAC is composed entirely of scientists from outside of Alberta. Because of the wide range of subject areas reviewed, and because they are not constant from year to year, *ad hoc* members are invited to join the committee for one competition. These temporary members participate in committee deliberations on the evaluation of Scientist Awards. More recently, a Program Advisory Committee, made up of knowledgeable scientists in Alberta, has been established to advise the President with respect to scientific programs.

In addition, there are several other committees to consider specific aspects of the various award programs and competitions. All peer review committees are appointed by the Trustees.

## Mission of the Foundation

In 1992, the Trustees re-examined the mission as stated in the Act (see terms of reference, on page 2), and formulated the following mission statement:

*"We support a community of researchers who generate knowledge that improves the health and quality of life of Albertans and people throughout the world.*

*Our long-term commitment is to fund basic, patient and health research based on international standards of excellence, and carried out by new and established investigators and researchers in training."*

# 1993 International Board of Review Recommendations

## FISCAL PLANNING

### **“That was then, this is now”**

Toward the end of the 1980s, the buoyant economy of Alberta began to falter. The provincial debt, less than a billion dollars in the early 1980s, rose to over 14 billion by 1992. The increase in the provincial debt and the antecedent rise in the federal debt was accompanied by a tightening of provincial and federal spending. The budgets of hospitals and universities were restrained or cut back, as were the funds available to federal granting agencies. A general atmosphere of belt-tightening prevailed.

In the heady first five to seven years after the establishment of the Foundation, it was generally assumed that the endowment would be supplemented at some time in the future. This assumption, and the substantial dollar requirement for “quick-starting” biomedical research in the Province, led to the heavy expenditure rates of the mid-1980s. The less favourable fiscal situation in the Province, which made supplementation of the endowment less certain, and the realization that continued high rates of spending would erode the purchasing power of the existing endowment led the Trustees to establish a five-year spending policy stated in the 1992 Strategic Planning Report as:

*“To manage expenditures to ensure the continuance of AHFMR for future generations while avoiding significant fluctuations in annual spending.”*

Endowment expenditures over the next few years are expected to rise slowly from \$26 million in 1992-93 to \$33.5 million in 1996-97, assuming a relatively stable financial market. This spending rate should permit sufficient return of interest income to the endowment to maintain its purchasing power for the future.

### **Recommendation 1**

*The IBR endorses the fiscal plan of the Trustees to maintain the endowment of the Foundation at today’s market value or higher, in order to preserve its original purchasing power.*

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## SMALLER BUT STABLE: RECOMMENDATIONS FOR PERSONNEL SUPPORT PROGRAMS

The primary focus of the Foundation's programs is directed towards personnel awards. This has proven to be an admirable policy that has served as a catalyst for the dramatic growth of the biomedical research effort in Alberta. The IBR supports unequivocally the thrust towards high quality personnel support. Inherent in this support is the need for the Foundation to build upon its role in maintaining a balance between the recruitment of new investigators, and a provision of support for a cadre of outstanding investigators who have achieved national and international recognition. In this way, the stability of core personnel support for outstanding programs will be maintained. New initiatives will be generated simultaneously, provided that they meet the high standards that have been established for personnel support. The role of the medical schools, working collaboratively with the Foundation, is critical to realizing these objectives. The nature and successes of key personnel programs are reviewed, with comments on their perceived strengths and weaknesses, and our recommendations for change.

### CAREER AWARDS

#### *a) Overview*

There are three principal career award programs: Clinical Investigatorships, Scholarships, and Heritage Medical Scientist Awards. The Clinical Investigator Award may be held for two 3-year terms, the Scholar Award may be held for two 5-year terms, and the Scientist Award is for a 5-year term, renewable. New and renewal awards are subject to the same careful review process. Personnel support programs have been used by the Universities of Alberta and Calgary to recruit a cadre of skilled investigators to the Province. A total of 220 investigators have been recruited to AHFMR-funded institutional positions since 1980. Of these, 159 (72%) are still supported by the Foundation. Forty-two left the system spontaneously: 26 to academic institutions outside Alberta, 12 to academic positions inside Alberta, and 4 to private industry.

At present, 63% of Foundation expenditures is for the Clinical Investigator, Scholar, and Scientist Programs. Assuming no further major supplementation of the endowment, the Trustees have proposed that the number of personnel support positions be capped at somewhere between 140 and 150. At the same time, the Trustees recognize that growth and renewal are essential and, thus, some recruitment must continue to take place.

#### *b) Scientist Awards*

The success rate in the Scientist Program has been 40% (16 out of 40, during the five most recent competitions). The success rate varied from 4 out of 18 in 1990-91 to 6 out of 13 in 1991-92.

The discussion of the Scientist Program revolved in part around the appropriate interpretation of the phrase "... to support a balanced long-term program of medical research..." in the Act establishing the AHFMR. The IBR appreciates that the challenge to the Foundation is to maintain the excellence of the research it supports and to help co-ordinate research within the Province. The possibility of adding an interview step to the Scientist application and renewal processes was discussed as one means of dealing with perceived inadequacies in the present review process. After numerous interviews and discussions, the IBR is persuaded that there was an implied moral commitment from the outset by AHFMR to provide career security to a limited number of outstanding investigators. It is equally apparent to the IBR that the universities have formulated their recruiting strategies based on their understanding that the commitment for career security was an inherent component of AHFMR policy.

## Recommendation 2

*The IBR recognizes the need to support both recruitment and core excellence through the programs of AHFMR. We recommend a policy that will provide career security for outstanding AHFMR-funded scientists; and that will create opportunities for recruitment in existing areas of strength and a limited number of new initiatives. In order to implement this policy, **while maintaining a steady-state budget**, the IBR recommends a programmed reduction in the number of AHFMR-funded faculty positions over the next five years.*



Since the IBR strongly supports the strategic goal of AHFMR of managing expenditures to maintain the present purchasing power of the Foundation, it is clear that the above recommendation for stability of Scientist positions will result in a somewhat reduced number of total faculty positions supported by AHFMR.

At the present time there are approximately 71 AHFMR-funded faculty positions at the University of Alberta and 88 at the University of Calgary. This discrepancy in numbers has occurred because of historical factors and budgetary considerations, which are different at the two universities. The Faculty of Medicine at the University of Alberta is older, has a larger number of provincially funded faculty positions, and initially was not aggressive in seeking AHFMR positions. The Faculty of Medicine of the University of Calgary, on the other hand, as part of a much younger institution, has very limited university budgetary resources for new faculty positions. Initially, the Calgary Faculty was laudably entrepreneurial in procuring AHFMR-funded faculty positions. Given present fiscal constraints, both at the level of the provincial government and AHFMR, it is obvious that a limitation on the number of terms of Scientist Awards would have a devastating effect on the excellent research programs developed at Calgary with AHFMR support.

We therefore suggest to the Board of Trustees that the total number of AHFMR faculty positions (i.e. Scientists, Scholars and Clinical Investigators) be capped at 70 for the University of Alberta and 65 for the University of Calgary by 1998 and thereafter. In addition, we suggest that over the same five-year period, three faculty positions, outside the cap, be allocated to each university for new initiatives (see recommendations for new initiatives on page 16). Under this plan, there would be no limit on the number of renewals for Scientist Awards, provided that the customary peer review takes place at five-year intervals. The total number of faculty positions would be 141 which, if one includes a varying number of terminal awards, is in keeping with the objectives of the Trustees in fixing the total number of faculty positions at between 140 and 150.

Each university would then have the capacity to manage its own strategy for AHFMR faculty, having at times to choose between submitting applications for Scientist renewals or applications for new Scholars or Clinical Investigators to stay within the limits of the cap. Clearly, close collaboration between the two universities and AHFMR will be necessary for the implementation of this proposal over a five-year period, and for the maintenance of a fixed number of positions. Changes in the total number of AHFMR faculty positions after 1999 should be anticipated by the universities if a review (third IBR) at that time indicates that a larger share of AHFMR resources should be directed to encouraging new initiatives.

### c) Scholar Awards

The Scholarship Program provides a five-year award, renewable once, for investigators who have recently trained in medical research, show promise of conducting independent research and wish to commit more than 75% of their time to research. During the past five competitions, the overall success rate has been 45.6% (26 approvals out of 57 applications), but there has been variation between universities within any one year.



During the interview sessions, AHFMR Scholars provided thoughtful and constructive comments. There was recognition and appreciation of the role of AHFMR in providing support, and particularly in providing generous start-up allowances through establishment grants. The Scholars expressed concern about the basis of their appointment; whether it was limited, or of career duration, subject to the peer review process. In the Faculties of Science, recruitment of Scholars was accompanied by a recognition of the need to guarantee back-up salary support from non-AHFMR sources should Foundation support cease. This was generally not the case in the Faculties of Medicine or other health faculties. Particular concern surrounded the criteria for progression from Scholar to Scientist, and whether the criteria were always entirely academic, or related to changing priorities, including the fiscal management, of the Foundation.

#### ***d) Clinical Investigator Awards***

The program provides further research training and experience for clinically qualified medical scientists who hold full-time academic appointments.

Ten of 22 applications for Clinical Investigator Awards have been successful over the past five competitions (45.5% approval). The number of applicants for this program is small and the success rates range from 2 out of 8 in 1990-91 to 4 out of 8 in 1991-92. A concern, expressed by the universities, AHFMR, and the individuals interviewed, is the relative difficulty of progressing from the Clinical Investigator Program to the Scholarship Program. This apprehension might be partially resolved if the Clinical Investigator application form included sections allowing for a detailed description of the research environment, mentor/advisory system proposed for the Clinical Investigator, and guarantees of time and salary protection from the Division Chief, Department Head, and Dean. Similar guarantees should be provided for the Clinical Investigator who progresses through to Scholar status.

AHFMR will need to monitor closely its Clinical Investigator Program. Clinical Investigators working within research groups are clearly at an advantage compared to those working in isolation. On the other hand, it may not be realistic in the 1990s to expect an active physician to play a direct role in bench research. This program may need to examine other ways in which the Clinical Investigator can collaborate with basic scientists, and contribute to new advances in health research. Furthermore, AHFMR, the universities, and the hospitals will need to initiate tripartite discussions to ensure appropriate protection, career structure and back-up salary support mechanisms for Clinical Investigators.

### **TRAINING PROGRAMS**

#### ***a) Overview***

The Act establishing the Foundation states that the Foundation should “encourage young Albertans to pursue careers in research in medical science”. Recognizing that trainees are the lifeblood of any research system, the Foundation has undertaken this responsibility. In addition, the commitment to training has been confirmed in the Foundation's recent strategic planning process:

*“To maintain research education and training programs and encourage young Albertans to pursue research careers.”*

The training programs provide support for students taking graduate studies in a medically related discipline (Studentships); for highly qualified doctoral graduates of science and health professional programs to take further training to prepare for careers in medical research (Post-doctoral Fellowships); for health professionals who have finished their clinical training (Clinical Fellowships); and for undergraduate students who wish to pursue medical

research on a part-time basis (Summer Studentships or Part-time Studentships). For the period 1980-1992 the Foundation supported 3,363 trainees. The largest single group was the summer students.

Following a peak in the number of trainees in 1985-86, there was a conscious decision by the Trustees to reduce the number of trainees supported by the Foundation. It continues to maintain a commitment to the training programs, however; and the number of trainees supported has remained relatively constant for the past three years. The greatest number are supported through the Studentship Program with a reduction in the number of Post-doctoral Fellowships awarded.

### ***b) Studentships***

The overall success rate in the last five Studentship competitions has been 32.4% (136 approved out of 420 applications). There is some variability from year to year (e.g. 40% success in 1990-91; 24% success in 1991-92). The total number of full-time students has now stabilized at 160-180, down from a high of approximately 240 in 1984-85 and 1985-86. Almost 50% of Studentships are awarded to graduates from an Alberta university, while 33% obtained a B.Sc. from a Canadian university outside Alberta.

The Studentship Program is well received and appreciated. An issue that was raised concerned individuals who had successfully received an award from another agency, in addition to AHFMR, and who also received a salary supplement from AHFMR. For these students, the number of years of eligibility for AHFMR awards was correspondingly discounted, based on the length of external support. Elimination of the supplement, or making it an option for students who would be made aware of the consequences, might resolve the issue. It is also suggested that the indirect costs for Studentships paid by AHFMR to the university be eliminated since they are a university responsibility.

Thirty-three percent of students during the period 1980-81 to 1987-88 progressed to further research training or further education. A substantial proportion found employment or were undergoing further research training outside Alberta.

The Summer Studentship Program of AHFMR was not reviewed in detail. It is clearly popular with a high rate (46%) of successful applications. The program is an ideal way for undergraduates to gain first-hand experience in a medical research environment.

### ***c) Post-doctoral Fellowships***

The program provides applicants of high academic standing and evidence of research ability with an opportunity to pursue a period of post-doctoral training in the biomedical sciences.

In the five most recent Fellowship competitions, the overall success rate was 30.2% (101 applications approved out of 334 total). The number of full-time Fellowships awarded decreased from 38% in 1990-91 to only 18% in 1991-92. The trend is consistent with the overall decrease in positions for full-time Fellows from about 230 in the mid-1980s to 84 in 1991-92.

Approximately 20% of successful Fellows held a Ph.D. or M.D. from a university in Alberta, while almost 50% held a doctoral degree from outside Canada. On completion of their award, almost 58% of Fellows found employment (academic or technical) or sought further training outside Alberta, a trend which should be monitored closely in future years.



There was general concern expressed by trainees and faculty about the reduction in the number of post-doctoral Fellowship positions, and in the number of awards made to superior graduate students who then receive post-doctoral training outside Alberta. In many laboratories, post-doctoral Fellows are the backbone of the research in progress, and the source of daily supervision and advice for graduate students. Operating grants do not allow sufficient flexibility to offer support to outstanding post-doctoral applicants. Concern was also expressed that the AHFMR supplement made individuals ineligible for subsequent AHFMR Fellowship awards and this issue could be addressed as recommended for the Studentships.

It is strongly suggested that the number of Fellowship positions be increased, in a manner that would allow fast-track acceptance of the best applicants. Faculty members would be encouraged to utilize these additional positions as multipliers to increase their potential for attracting additional Fellowship support to their laboratories.

**Recommendation 3**

*The IBR recommends that AHFMR support a limited number of additional post-doctoral Fellowships as an innovative fast-track response program administered by the universities. Faculty members would be eligible to apply for support of a post-doctoral Fellow through block grants to their university from the Foundation.*



Under this recommended program, the applications would be reviewed frequently (i.e. every 4-6 weeks) by the appropriate committees of each university. Successful applicants would be informed rapidly of the outcome of their application, but would receive a guarantee of support for no more than 12 months. Continued support would be possible through the regular AHFMR Fellowship competition or through other sources. This recommendation would ensure adherence to the principles of excellence through peer review, while providing Alberta investigators with an advantage that should facilitate the recruitment of superior Fellows to their laboratories. It is recommended that an allocation to support 5 *additional* post-doctoral trainees per year be made to the University of Alberta, and a similar allocation to the University of Calgary, for a trial period of three years, at which time the program should be evaluated by the Board of Trustees.

AHFMR also has a Clinical Fellowship Program with annual awards that are renewable for three years for medical graduates. Success rates range from 24% (4 out of 17 applicants) in 1991 to 53% (10 out of 19) in 1992. Sixty percent of applications received their M.D. from an Alberta university. This program would appear to be quite successful. Fifty percent of its graduates found academic employment and half of these remained within Alberta.

**Research Support and Infrastructure Programs**

The Foundation provides support for travel by Alberta faculty; Visiting Professorships; conferences and workshops; major equipment; and contributions towards the administrative cost associated with the management of financially supported medical research conducted within the universities. The Foundation has also provided support for renovation of laboratory space, medical libraries, computer equipment, technical workshops, animal facilities, recruitment costs, secretarial support, and installation of Foundation-funded equipment.

#### **Recommendation 4**

*The IBR supports the present policy of the Trustees to reduce the level of expenditure on some of the infrastructure programs associated with personnel and training awards.*

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#### **Bridge Funding Program**

The Bridge Funding Program is a temporary measure designed to ease the burden of providing salary support for investigators coming off AHFMR awards and for whom no university support has been readily identifiable. The IBR understands the need for this program at the present time, but urges the Foundation and the medical schools to take steps to ensure that it is only of a temporary nature, and that it will not be necessary to re-invoke the program in the future. Our concern is that faculty members might be supported through this program without being required to hold research operating support. The IBR strongly urges AHFMR and the universities to ensure that faculty members supported through the Bridge Funding Program do indeed hold research operating grants from an external agency.

### **NEW INITIATIVES: THE NEED FOR A PROACTIVE APPROACH**

In the first decade of its existence, the AHFMR focussed on developing mechanisms for peer review, establishing categories of research funding and creating a scientific advisory council (SAC) to address policy issues and to establish the criteria for appointments of Heritage Scientists. Most biomedical research initiatives arose from the principal beneficiaries of the Foundation's largesse, i.e. the two medical schools of the Province. In more recent years successful applications, fewer in number, have also been received from other faculties at the two universities.

During this period of rapid growth and stabilization, including the construction of Heritage Medical Research buildings at each institution, the Foundation office has responded ably to research initiatives. The overall success of the university initiated programs has been outstanding. The administrative staff of the Foundation has been modest in size, and efficient, with total administrative costs restricted to less than 5% of total annual expenditures.

While this reactive stance and a modest administrative structure have served the Foundation well in the 1980s, it is evident to the IBR that the 1990s will be different. In the first place, total expenditures are necessarily going to be level, introducing a period of steady state rather than growth. Second, despite these constraints, the IBR recognizes the necessity of seeding new programs and of exploring, validating, and recommending new initiatives. The IBR believes that these new programs will need to be developed by the Foundation in collaboration with the constituent universities by mechanisms distinct from those currently in place.

#### **Recommendation 5**

*The IBR recommends that the Foundation develop a proactive approach to research opportunities in the biomedical and health sciences.*

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### **Recommendation 6**

*The IBR recommends that encouragement be given to collaborative projects between universities. There are instances where the critical mass essential for a major advance may be found by the establishment of affinity groups across faculties and campuses.*

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### **Recommendation 7**

*The IBR recommends that the Foundation develop an expanded set of consultative and collaborative activities with the universities, the government of the Province of Alberta and its other health-related agencies and with Foundations, Research Institutes, and Universities outside the Province.*

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### **Recommendation 8**

*The IBR recommends the establishment of new mechanisms to explore appropriate and effective ways to exploit new initiatives that will have a direct impact on the health and well-being of the citizens of Alberta.*

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### **Recommendation 9**

*The IBR recommends the appointment of a Senior Administrative Officer to manage many of the day-to-day activities of the Foundation, freeing the President to undertake an exploration of new initiatives.*

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There was a strong consensus by the IBR that core long-term support of faculty positions ought not to foreclose opportunities for the Foundation to initiate new programs or new areas of research. Hence, our recommendation for capping the number of faculty positions supported by AHFMR at the two universities. The IBR was of the opinion that about 10-20% of the AHFMR budget should be gradually redirected to new initiatives over the next five years. This amount would include the six faculty positions for new initiatives.

One example, already identified as an area of opportunity in the Foundation Strategic Plan, is the need to develop initiatives in health research. The IBR recognizes this as an important issue for the Province and recommends that a careful assessment of the strategies and options for such an initiative be undertaken. The IBR goes on record concerning the potential dangers of entering this arena without the requisite expertise and without clearly defining the goals and objectives at the outset.



In advancing this recommendation, the IBR recognizes that the Foundation *ought to support research personnel and not the ongoing operating costs of any health policy or health care research initiatives*. In arriving at a workable approach, consultation and collaboration ought to be sought from the universities, including the university hospitals, applicable governmental agencies, and affiliated public health institutions. In assessing the strengths of any new research initiative, it would seem wise either to expand the Scientific Advisory Council to include scientists from the appropriate disciplines, or to form an *ad hoc* review group to give advice about what directions are appropriate. Because issues of health care access, cost containment, and quality control are international concerns, it is important to assure that any initiatives undertaken in Alberta are closely connected to those underway in other provinces and are related to experiences in other countries.

The IBR suggests a method for exploring new initiatives that has been utilized by other major funding agencies. Initially, the Foundation might invite two or three of the most expert persons in the area of research under consideration to act as consultants. The consultants would make a presentation to the Scientific Advisory Committee to educate them in the area, since only a small proportion of the SAC members may be familiar with the discipline under discussion. Then, the consultants would be encouraged to consult widely with others in their field outside the Province, and finally organize a meeting of twenty or so interested scientists at a suitable location in Alberta under the sponsorship of the AHFMR. The specific purpose of the meeting would be to define major problems in the area under consideration, to discuss research strategy, and to make concrete recommendations to the Foundation on how to invest in the area.

A new initiative in health research has been recommended by the Foundation in its strategic planning report of 1992. The IBR was encouraged to learn that the Province has already shown leadership in this area with the formation of the Provincial Advisory Committee on Health Research, chaired by Dr. David L. Tyrrell. This group, established in 1992, has been allocated approximately one million dollars per annum over the next two years. We would urge that close coordination be developed between this Advisory Committee and the Foundation. It is reassuring to note that the President of the AHFMR is a member of the committee.

The IBR considers it important that the Foundation develop a generic approach to establishing any new initiative of this or other kinds. The Foundation should have a general goal of considering a new initiative about once every five years to allow room for innovation without destabilizing existing programs. It is suggested that consultation in each case be undertaken with the universities, the medical schools through the Program Advisory Committee, the university teaching hospitals, and the SAC. It is further suggested that a request for proposals be distributed for each new initiative. It is anticipated that over the next decade several new areas of research focus will emerge in the biomedical and health sciences, and in related sociological and behavioural sciences. The Foundation ought to take an active role in identifying and supporting these new research areas.

## HEALTH RESEARCH

Since the strategic plan approved by the Trustees of the AHFMR places increased emphasis on health research and since this proposed change in direction has engendered considerable discussion in various constituencies, the IBR is of the opinion that some specific comments on this particular new initiative are in order.

The Premier's commission on future health care, *The Rainbow Report*, published in 1990, was aimed at identifying health priorities for Alberta. The government response, *Partners in Health*, published in November 1991, expressed the view that AHFMR should retain its focus on biomedical research but be a partner in health research. Based on its strategic planning report, the Foundation has signalled its intention to move into this area. At the same time, there is a general apprehension within the academic community that a focus on health research might compromise the excellence of the existing biomedical research program.

If AHFMR is to promote a dual focus on science goals as well as health goals, a clear strategy is essential. There is no indication as yet of a coherent problem-oriented program of applied research. The AHFMR could be catalytic in helping to achieve this objective, but in order to do so the Foundation needs to be specific about its role in health research. Multidisciplinary health research (including basic and applied medical research) requires alliances with other major interested parties including the Department of Health, the teaching and non-teaching hospitals, the universities, national and private funding agencies, industry, and the public. *The strategy for health research needs to be based on a clear identification of the health problems of Albertans, including those of minority populations.*

Given the substantial contribution of AHFMR to medical research in Alberta, it would be helpful if the President of AHFMR had access to the Minister of Health on a regular basis. In addition, both the Medical Research Council and AHFMR, as well as the National Cancer Institute of Canada, have expressed their intention of expanding their mandate to include health research. There may be scope for a more formal relationship between the Foundation and other agencies interested in funding this important area of investigation. The development of effective alliances with other constituencies requires a proactive approach by AHFMR.

The mission of each of the constituencies in health research needs to be clarified. For example, the IBR was unable to form a clear view of the mission of the two universities with respect to health research and health care research. Although there was recognition by both universities that applied health research is an area deserving of more support, their enthusiasm is somewhat dampened by a lack of new resources during a period of financial constraint.

During the interview sessions a number of new initiatives in health research and related disciplines were brought to the attention of the IBR:

- ◆ The AHFMR, the Alberta College of Family Practice, and the Max Bell Foundation jointly support an initiative in *primary care research* in the Departments of Family Medicine at the University of Alberta and the University of Calgary. This tripartite program in health research is an excellent example of synergy between interested partners.

- ◆ AHFMR has agreed to fund a proposal submitted by the University of Alberta, the University of Alberta Hospitals, The University of Calgary Faculty of Medicine, and the Foothills Hospital to establish a *Centre for Evaluative Research*. The Centre will be linked between the two academic medical centres and will focus on clinical trials and outcomes research. It will involve epidemiologists, biostatisticians and health economists. It will include the Department of Health Services Administration and Community Medicine at the University of Alberta, and involve clinicians from several other departments interested in health services research.

◆ The University of Alberta Hospital and the Faculty of Medicine are in the process of establishing a joint initiative in health research in a *Health Care Quality and Outcomes Research Centre*.

◆ *Community health research linkages* are being strengthened with health units (Boards of Health) in the Edmonton region. There are plans to strengthen interdisciplinary research at the University of Alberta, and to include social sciences and humanities departments in these efforts.

◆ A *Centre for the Advancement of Health* has been established at the University of Calgary and the Foothills Hospital to provide an infrastructure for clinical investigation, study design, biostatistics, and epidemiological expertise.

◆ A *Network for Health Research* has been established in Calgary.

◆ Several clinicians are involved in a *patient care and outcomes* process at the University of Calgary. The project involves the critical evaluation of procedures, techniques, and care patterns. A senior individual is being sought for health care/policy research.

◆ *Clinical trials* in cardiovascular disease were identified as a priority at the University of Calgary.

◆ The University of Calgary has proposed the establishment of a *Health Promotion Institute*.

◆ The University of Lethbridge *Regional Centre for Health Promotion and Community Studies* is one of six new research centres established under a national program of health promotion in Canada. The centre is based at the University's School of Nursing and will look specifically at the special health needs of small urban communities with cultural diversity, rural communities, and Native communities.

The IBR was unable to determine how these various initiatives come together within a strategic framework for health and health services research. Neither was it clear how they related to priority health issues in Alberta. Finally, it was not made clear how the existing and planned initiatives in the universities and university hospitals related to AHFMR strategy.

## Recommendation 10

*The Foundation is facing a dilemma of conflicting priorities shared by many funding agencies formerly operating solely in the biomedical area. The IBR recommends that health research be supported in relation to the characterization and prioritization of health problems in the Province of Alberta. The role of AHFMR should be to focus on the provision of the skills necessary to conduct health research with emphasis on methodology development.*

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The establishment of the Provincial Advisory Committee on Health Services Research could provide the basis for a productive interaction between the Foundation and the Alberta Department of Health. The Foundation might play a valuable role in pump-priming key areas of work and in attracting high calibre individuals to undertake health services research. Through the Provincial Advisory Committee, the Alberta Department of Health could become a purchaser of applied health research relevant to the needs of Albertans. With this arrangement, the activities of AHFMR would complement the Department of Health's own commitment to health services research.

As presently constituted, the Scientific Advisory Committee of AHFMR probably does not have sufficient health research input for an expanded role. While the composition of the Committee is appropriate for investigator-driven proposals, the Committee is not well placed to take forward problem-focussed initiatives. Either the Scientific Advisory Committee should be supplemented by additional members, or a sub-committee on health research should be established. Although peer review mechanisms for health research should be no less rigorous than for biomedical research, the former is less well developed than the latter. The AHFMR should play a constructive role in working with the research community to stimulate high quality work in health research and related areas.

## PEER REVIEW, COMMITTEE STRUCTURE AND PROCESS

The first goal of the strategic plan of the AHFMR is *"to maintain international standards of excellence through an appropriate and effective peer review system"*. The IBR endorses strongly the Foundation's commitment to sustaining the highest levels of excellence. It is recognized that there will be a progressive increase in the rigour and expectations of the peer review process as individuals compete for the more senior programs of the Foundation, and for renewal within them. Given the prestige that is associated with AHFMR awards, and their limited number, the underlying criteria for selection will necessarily continue to be more demanding than those for regular faculty progression.

The requirements of the peer review process as practised by AHFMR are clearly enunciated. The terms of reference for all awards are stated clearly in the manual entitled *"AHFMR Guidelines for Grants and Awards"*. The Foundation utilizes several expert committees with membership from biomedical investigators whose expertise and adherence to the highest standards are well respected. The names of members of review committees are published each year in the annual report of AHFMR. Foundation staff and members of the Board of Trustees review the effectiveness of committee members, and the operation of the peer review process. The opinions of expert external referees are sought as critical adjuncts to committee reviews. The IBR was impressed with the overall quality of the peer review process as practised by AHFMR. The return rate on external reviews is excellent, perhaps justifying the small fee paid to external referees in recognition of their time and efforts. Occasional comments during the site visit characterized some reviews as uninformed or misleading. However, the number of adverse comments were relatively few and would not appear to justify either changing the present process, or implementing an appeal mechanism.

The Scientific Advisory Council (SAC) is drawn from the international scientific community, and does not have Alberta representation, with the exception of the President of AHFMR. Two additional committees, the Program Advisory Committee (PAC) and the Committee on Committee Membership, made up of scientists within Alberta, have been formed recently. The IBR repeatedly heard concerns that the PAC met infrequently and was ineffective. Several individuals expressed the view that the Alberta universities should have representation on SAC, in addition to representation, currently through the University Presidents, on the Board of Trustees. The IBR was sympathetic towards these concerns, but felt that the impartial nature of SAC was crucial and was more readily sustained with its present international composition. However, the IBR sensed a real need to improve formal and informal communication between AHFMR and local stakeholders, particularly the Deans of the Faculties of Medicine and the university scientific communities. It was felt that this objective could be met by increasing the profile and impact of PAC, and by inviting the Chair of PAC to participate as an *ad hoc* member of SAC from time to time.

**Recommendation 11**

*The IBR supports the current composition of the scientific committees of AHFMR, and the use of expert ad hoc members when appropriate. To enhance communication with the scientific community in Alberta, and to provide stronger input from PAC to SAC, it is recommended that PAC be required to meet at least quarterly; that it evolve into the principal local advisory committee between the President of AHFMR and the Alberta universities, and that the minutes of its meetings be provided to SAC and the Board of Trustees. The Chair of PAC, or delegate, should be invited to participate as an ad hoc member in the meetings of SAC for discussion of specific issues.*



As part of the increased emphasis on the importance of the PAC, the Foundation should seek ways to communicate formally with key hospital administrators. They might be involved in the PAC meetings or they might have semi-annual meetings of their own with the President of the AHFMR and his staff. The IBR believes that there is some validity to the complaint of hospital administrators that they are not part of the planning process, even though AHFMR-supported faculty have a major impact on their budgets and their directions. Unless the hospitals have some input, the administrators may well discount AHFMR completely in their own planning. They indicate a constructive interest in supplemental support from hospital resources for Scientists, Scholars and Clinical Investigators, but feel that in order to provide this support, they must be in on the planning process.

## TECHNOLOGY COMMERCIALIZATION

The Technology Commercialization Program of the Foundation was initiated in 1985. In the initial phases, two types of awards were available; a Phase I grant to establish the feasibility of a promising concept arising from a scientist's ongoing research, or the research of others, and a Phase II grant for a product or technique that had been laboratory tested but required further investigation and refinement to develop it to a stage where it was likely to attract investment capital. In 1989, the Province of Alberta allocated a portion of the funds received from the federal government following the passage of Bill C-22 to the support of technology commercialization. This allocation led to the establishment of the Alberta Medical Innovation Fund, administered by the Foundation, to provide Phase III technology commercialization support in amounts up to \$500,000. Phase III funding supports the later stages of commercialization including final product development, market surveys, business organization, and clinical trials.

The Technology Commercialization Program funds Alberta innovators who desire to link health care technology and industry by transforming new ideas and scientific findings into commercial health care products and processes. The program is structured to promote research-industry collaboration.

So far, the program has received 146 applications and made 65 awards in the three categories: 34 Phase I projects at a total cost of \$790,000; 22 Phase II projects for a total of \$1,556,000; and since 1990, \$2,547,000 has been awarded to Phase III projects. It is too early to judge the success of these awards, but there are promising indications of successful commercial applications.

The program is popular in the university communities and clearly fills a need in providing small amounts of money and counsel at the stages before scientific concepts and products can engage the interest of venture capital or commercial entities. The IBR found that there was nothing but praise for the way in which the Foundation staff manages the program and responds to enquiries.

### Recommendation 12

*The IBR recommends that AHFMR continue its technology commercialization program, consider minor modifications in process suggested by its constituency, and consider expansion of the resources available for its support.*

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For Phase I awards, the process of assessing technology and its potential for commercialization often takes longer than expected. Therefore, there should be the opportunity to apply for a further Phase I award in cases with strong potential. The process may require extensive consulting advice and total Phase I costs may be closer to \$50,000-75,000 for some projects.

For Phase II awards, one observer felt that the review criteria were too demanding in the requirements for a comprehensive business plan and for extensive market research, and that the reviewers were sometimes too academic and risk-averse.



For Phase III awards, the response to applications tends to be prolonged in some cases by requests for further information and repeat review by the AHFMR committee. It was suggested that the willingness of a commercial partner to match AHFMR funding should serve as more important evidence for an award than committee reviews.

The IBR suggests that AHFMR should include technology transfer officers at the universities and university scientists in the drafting of revised criteria for Phase I, II and III awards, and in the preparation of a list of individuals with relevant business experience to serve as reviewers and committee members. The IBR also suggests that AHFMR should institute a system of regular follow-up reviews, particularly for Phase III awards, to ensure that funds are being spent for the stated purposes and to assess progress made. The review process could be helpful to the business partner as well. Phase III support is still very early in the process of launching a new industry initiative, and it is extremely important to avoid a gap in the sequence of development assistance between Phase III awards and government programs. The interface should be examined and ongoing liaison maintained.

The AHFMR's newsletter on technology commercialization is excellent, but it needs to be supplemented by presentations on each campus to "flush out" potential projects currently lying dormant in academic laboratories.

## Concluding Thoughts

A new initiative in health research has been recommended by AHFMR in its strategic planning report of 1992. It is anticipated that over the next decade several new areas of research focus will emerge in the biomedical and health sciences. The Foundation ought to take an active role in identifying and supporting these new research areas.

The IBR considers it important that the Foundation develop a systematic approach to establishing any new initiative. AHFMR should have a general goal of considering a new initiative about once every five years, to allow room for innovation without destabilizing existing programs. It is suggested that consultation in each case be undertaken with the universities, the medical schools, the university teaching hospitals, and the Scientific Advisory Committee.



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